

What is claimed is:

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2)  
a)

1. An ultrasound diagnostic apparatus comprising:  
scanning means for repeatedly scanning a cross  
section of an examining human body implanted bubbles as  
5 ultrasonic shadowing agent with an ultrasound to collect  
an echo signal;

image data obtaining means for repeatedly  
obtaining image data based on said echo signal;

10 displaying means for displaying said obtained  
image data as a motion image; and

changing means for changing power of said  
ultrasound from first power to second power stronger  
than said first power.

15 2. The apparatus according to claim 1, wherein  
said power is sound pressure.

3. The apparatus according to claim 1, wherein  
said scanning means includes a piezoelectric element  
group and voltage generating means for variably  
generating a voltage for driving said piezoelectric  
20 element group, and said changing means changes the  
voltage generated by said voltage generating means from  
a first voltage corresponding to said first power to a  
second voltage corresponding to said second power and  
being higher than said first voltage.

25 4. The apparatus according to claim 1, wherein  
said image data obtain means includes means for storing  
image data first obtained after said power of the

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ultrasound is changed from said first power to said second power.

5        5. The apparatus according to claim 1, wherein said displaying means includes means for displaying image data first obtained after said power of the ultrasound is changed from said first power to said second power as a static image.

10       6. The apparatus according to claim 1, further comprising inputting means for manually designating a change of power from said first power to said second power.

15       7. The apparatus according to claim 1, wherein said changing means includes means for returning power of said ultrasound to said first power after the scanning is continued for a predetermined period of time by said second power.

20       8. The apparatus according to claim 1, wherein said image data obtaining means includes means for subtracting image data, first obtained after said power of the ultrasound is changed from said first power to said second power, and image data, nth obtained after said power of the ultrasound is changed from said first power to said second power, from each other between frames.

25       *sub a3* 9. The apparatus according to claim 1, wherein said scanning means includes means for repeating a receiving and transmitting operation twice in

connection with each of said ultrasonic scanning lines,  
and means for subtracting the echo signal obtained by  
the first receiving and transmitting operation and the  
echo signal obtained by the second receiving and  
5 transmitting operation from each other, and said image  
data obtaining means obtains image data based on said  
subtracted echo signal.

10. The apparatus according to claim 1, wherein  
said scanning means includes means for extracting a  
10 high frequency component from said echo signal, and  
said image data obtaining means obtains image data  
based on said high frequency component.

11. The apparatus according to claim 1, wherein  
said displaying means includes means for displaying a  
15 power state of said ultrasound.

12. The apparatus according to claim 1, wherein  
said image obtaining means includes means for obtaining  
a time density curve of a pixel value of said image  
data.

20 13. The apparatus according to claim 1, wherein  
said scanning means includes first means for generating  
the ultrasound by said first power, and second means  
for generating the ultrasound by said second power.

25 *Sub A4* 14. An ultrasound diagnostic apparatus comprising:  
scanning means for repeatedly scanning a cross  
section of an examining human body implanted bubbles as  
ultrasonic shadowing agent with an ultrasound to repeat

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an echo signal;

image obtaining means for repeatedly obtaining  
image data based on said echo signal;

displaying means for displaying said generated  
5 image data as a motion image; and

changing means for changing a frequency of said  
ultrasound from a first frequency to a second  
frequency.

15. The apparatus according to claim 14, wherein  
10 said image obtaining means includes means for storing  
image data first obtained after said frequency of the  
ultrasound is changed from said first frequency to said  
second frequency.

16. The apparatus according to claim 14, wherein  
15 said displaying means includes means for displaying  
image data first obtained after said frequency of the  
ultrasound is changed from said first frequency to said  
second frequency as a static image.

17. The apparatus according to claim 14, further  
20 comprising inputting means for manually designating a  
change of the frequency from said first frequency to  
said second frequency.

18. The apparatus according to claim 14, wherein  
25 said changing means includes means for returning the  
frequency of said ultrasound to said first frequency  
after the scanning is continued for a predetermined  
period of time by said second frequency.

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a 19. The apparatus according to claim 14, wherein  
said image obtaining means includes means for  
subtracting image data, first obtained after said  
frequency of the ultrasound is changed from said first  
5 frequency to said second frequency, and image data, <sup>subsequently</sup> ~~nth~~  
obtained after said frequency of the ultrasound is  
changed from said first frequency to said second  
frequency, from each other between frames.

Sub 20. The apparatus according to claim 14, wherein  
10 said scanning means includes means for repeating a  
receiving and transmitting operation twice in  
connection with each of said ultrasonic scanning lines,  
and means for subtracting the echo signal obtained by  
the first receiving and transmitting operation and the  
15 echo signal obtained by the second receiving and  
transmitting operation from each other, and said image  
generating means generates image data based on said  
subtracted echo signal.

21. The apparatus according to claim 14, wherein  
20 said scanning means includes means for extracting a  
high frequency component from said echo signal, and  
said image data obtaining means obtains image data  
based on said high frequency component.

22. The apparatus according to claim 14, wherein  
25 said displaying means includes means for displaying a  
frequency state of said ultrasound.

23. The apparatus according to claim 14, wherein

said image obtaining means includes means for obtaining a time density curve of a pixel value of said image data.

*Sub A6/24*  
5 24. An ultrasound imaging method, which repeatedly scans a cross section of an examining human body implanted bubbles as ultrasonic shadowing agent with an ultrasound to obtain an echo signal, repeatedly obtains image data based on said echo signal, and displays said image data as a motion image, comprising:

10 a first step of scanning said ultrasound by first power; and

a second step of scanning said ultrasound by second power stronger than said first power after scanning said ultrasound by said first power.

15 25. The method according to claim 24, wherein said power is sound pressure.

26. The method according to claim 25, further comprising a third step of returning power of said ultrasound to said first power after the scanning is  
20 continued for a predetermined period of time by said second power.

*Sub A7/27*  
25 27. An ultrasound imaging method, which repeatedly transmits an ultrasound to an examining human body implanted bubbles as ultrasonic shadowing agent, receives a reflected wave from said examining human body to repeatedly obtain an echo signal of a cross section of said examining human body, repeatedly

obtains image data based on said echo signal, and  
displays said image data as a motion image, comprising:

a first step of scanning said ultrasound by a  
first frequency; and

5 a second step of scanning said ultrasound by a  
second frequency after scanning said ultrasound by said  
first frequency.

28. The method according to claim 27, further  
comprising a third step of returning the frequency of  
10 said ultrasound to said first frequency after the  
scanning is continued for a predetermined period of  
time by said second frequency.